

A preliminary list of arthropod families present in the Burmese amber collection at The Natural History Museum, London

A. P. RASNITSYN

Arthropod Laboratory, Paleontological Institute, Russian Academy of Sciences, Profsoyuznaya Str. 123, Moscow 117647, Russia

A. J. ROSS

Department of Palaeontology, The Natural History Museum, Cromwell Road, South Kensington, London SW7 5BD

SYNOPSIS. The present account is based on the 117 pieces of Burmese amber in the collections of The Natural History Museum, London. The material was found to be very rich in fossils yielding almost 1200 individual arthropod specimens.

INTRODUCTION

Below is a list of families of arthropods identified in the pieces of Burmese amber in the Department of Palaeontology of The Natural History Museum, London. The collection was initially identified to Order level by AJR, then APR made a more thorough study with additional identifications by scientists at the Paleontological Institute, Moscow and other institutions. This list provides, for the first time, a detailed account of the Burmese amber collection at the NHM and hopefully will stimulate further research by specialist entomologists and palaeontologists.

The list follows the format of Ross & Jarzembowski (1993). For each order and family, the identifier(s) is given in brackets, along with the total number of specimens. For each family, the registration numbers of the pieces of amber (pre-fixed by In.) are given. For each piece of amber, the number of individual specimens is given in brackets if there is more than one (abbreviated spm), and if the piece contains a type or figured specimen this is also indicated in brackets (abbreviated T or F respectively). Specimens In.19102–23, In.20149–50 and In.20195 all came from the same block that was sliced up into 7 slabs (see Cockerell, 1917). The 7 slabs contain a total of 458 inclusions, which makes the whole block the richest piece of amber ever recorded. For further information on the type and figured specimens in the collection, see the comprehensive list by Ross & York, this volume. The specimens of copal that Cockerell (1922) recorded are not included because there is uncertainty as to whether they are from Burma.

The total number of specimens in the list is 1198.

Collembola

Order Collembola (APR)	57+1?
Family Sminthuridae	32+3?
In.19098?, In.19100, In.19123 (4 spm), In.20150? (2 spm), In.20151, In.20186 (10 spm), In.20188 (16 spm)	
Undetermined	22+1?
In.19100, In.19102–3, In.19123 (2 spm), In.19128, In.19132, In.20150 (4+1? spm), In.20151, In.20171 (9 spm), In.20180, In.20183	

Insecta

Order Archaeognatha (APR)	1
Family Machilidae	1
In.20188	
Order Zygentoma (APR)	4
Family Lepismatidae	3+1?
In.19104–6, In.19107–16, In.19117–22 (T), In.20149?	
Order Ephemeroptera (N. D. Sinitshenkova)	1
Family Prosopistomatidae	1
In.20173 (T)	
Order Blattodea (APR)	58
Family Blattellidae (AJR)	3
In.19102–3, In.20149, In.20172	
Family Polyphagidae (AJR)	1
In.20194	
Undetermined (mainly nymphs, isolated legs or body parts)	54
In.19102–3 (9 spm), In.19104–6 (2 spm), In.19107–16 (5 spm), In.19117–22, In.19123 (6 spm), In.19128, In.19132 (2 spm), In.19136 (2 spm), In.20149 (9 spm), In.20150 (7 spm), In.20151, In.20152, In.20164, In.20171 (2 spm), In.20174, In.20175, In.20182, In.20192, In.20200	
Order Dermaptera	1
Family Labiduridae	1
In.20146 (T)	
Order Embioptera	1
Family Burmitembiidae	1
In.19132 (T)	
Order Isoptera (APR)	91?
Family Hodotermitidae (K. Krishna)	2
In.19123, In.20160	
Family Kalotermitidae	89?
In.19096 (2 spm, 1 T), In.19102–3 (11 spm, 1 T), In.19104–6 (3 spm), In.19107–16 (15 spm), In.19117–	

22, In.19123 (many, 50? spm), In.20149 (5 spm), In.20174, In.20699			
Order Mantodea (P. Vrsansky, APR)	3+1?		
Undetermined	3+1?		
In.19100-1 (nymph), In.20150, In.20152 (nymph), In.20162? (ootheca?)			
Order Orthoptera (APR)	3+2?		
Superfamily Grylloidea	2+1?		
In.20152? (nymph), In.20171 (2 spm)			
Undetermined	2?		
In.19107-16?, In.20161?			
Order Phasmatodea (APR)	3?		
Undetermined	3?		
In.19117-22? (3 spm, eggs)			
Order Hemiptera (D. E. Shcherbakov)	82		
Family Achilidae	28		
In.19094 (2 spm), In.19102-3 (8 spm), In.19104-6 (2 spm, 1 T), In.19117-22 (5 spm), In.19123 (2 spm), In.20149 (4 spm), In.20150 (2 spm), In.20168, In.20186, In.20191			
Family Aleyrodidae	3		
In.19133-4 (T), In.20193 (T), In.20703			
Family Aphrophoridae	1?		
In.19094?			
Family Cixiidae	2		
In.19094 (2 spm, 1 T)			
Superfamily Coccoidea	16+1?		
In.19098, In.19102-3, In.19125?, In.19132, In.20155, In.20160, In.20168 (2 spm), In.20172, In.20174, In.20175, In.20186, In.20188, In.20191, In.20193 (2 spm), In.20708			
Family Coreidae s.l.	1		
In.20186			
Family Enicocephalidae	6		
In.19095 (T), In.19107-16 (2 spm, 2 T), In.19123 (2 spm, 1 T), In.19128			
Superfamily Fulgoroidea undetermined	13		
In.19098 (2 spm), In.19130, In.20160, In.20167 (3 spm), In.20171, In.20172, In.20174, In.20175, In.20191, In.20195			
Family Ochteridae	1		
In.20160			
Undetermined	10		
In.19107-16 (5 spm), In.19117-22, In.19125, In.20152, In.20158, In.20185			
Order Psocoptera	47		
Family Compsocidae	1		
In.20193			
Family Pachytroctidae	2		
In.19136 (2 spm, 1 T)			
Family Psyllipsocidae	4		
In.19097 (T), In.20174, In.20193, In.20706			
Undetermined	40		
In.19096, In.19098 (2 spm), In.19102-3, In.19107-16, In.19177-22 (2 spm), In.19136 (18 spm), In.20150, In.20151 (2 spm), In.20163, In.20172, In.20173, In.20174, In.20175 (2 spm), In.20178 (2 spm), In.20186, In.20187, In.20199, In.20707			
Order Thysanoptera (APR)	14		
Family Lophioneuridae (V. V. Zherikhin)	1		
In.20194 (T)			
Undetermined	13		
In.19133-4, In.19135, In.19098, In.20149, In.20168, In.20172 (8 spm)			
Order Coleoptera (APR, V. G. Gratshev, N. B. Nikitsky, P. Hammond)	195		
Family Aderidae	1?		
In.20150?			
Family Anthicidae	1		
In.19107-16 (T)			
Superfamily Cantharoidea	1+1?		
In.19123 (larva), In.20169?			
Family Carabidae	1		
In.20150 (larva)			
Family Cerambycidae	1		
In.20188			
Family Chrysomelidae	1?		
In.20150? (larva)			
Family Cisidae	1?		
In.19136?			
Superfamily Cleroidea	1?		
In.20169?			
Family Colydiidae	3+3?		
In.19107-16? (T), In.19117-22?, In.19123 (2 spm), In.20149?, In.20174			
Family Cucujidae	4?		
In.19102-3?, In.19104-6?, In.20150?, In.20174?			
Family Dermestidae	1+1?		
In.19107-16 (1+1? spm, 1 T)			
Family Elateridae	19		
In.19102-3 (8 spm, 1 T), In.19107-16 (5 spm, 1 T), In.19117-22 (2 spm), In.19123 (2 spm), In.20186, In.20187			
Family Eucinetidae	1		
In.20186			
Family Eucnemidae	2		
In.20168 (2 spm)			
Family Helodidae	1?		
In.20150?			
Family Lathridiidae	1		
In.19136			
Family Melandryidae	1+1?		
In.19136, In.20706?			
Family Melyridae	1		
In.20160			
Family Microsporidae	1		
In.19132			
Family Mordellidae	1		
In.20160			
Family Nitidulidae	1		
In.20178 (larva)			
Family Oedemeridae	2?		
In.19123?, In.20190?			
Family Pselaphidae	6		
In.19104-6 (2 spm), In.19123, In.20150, In.20171, In.20207			
Family Ptiliidae	3		
In.19132, In.19160, In.19107-16			
Family Rhipiphoridae	1		
In.19092 (T)			

Family Salpingidae In.20199?	1?	In.19097?, In.19098, In.19100–1 (2 spm, 1 T), In.19133–4?, In.20147 (T), In.20155 (2 spm), In.20156,	
Family Scrautiidae In.19102–3, In.19107–16, In.19117–22, In.19123 (11 spm), In.19126, In.20150	16	In.20164, In.20167 (5 spm), In.20168 (2 spm), In.20171, In.20172 (2 spm), In.20187 (2 spm), In.20189, In.20198, In.20707 (4 spm), In.20710 (7 spm)	
Family Staphylinidae In.19107–16, In.19136 (2 spm), In.20150 (13 spm), In.20152, In.20158, In.20160 (2 spm), In.20169, In.20751, In.20194	23	Family Rhagionidae In.20175, In.20709?	1+1?
Superfamily Staphyloidea undetermined In.19123, In.20194	2	Family Scatopsidae In.20150	1
Family Throscidae In.20150?	1?	Family Sciaridae In.19096, In.20151, In.20152, In.20188, In.20199	5
Undetermined In.19092 (2 spm), In.19094 (2 spm), In.19098, In.19100–1, In.19102–3 (9 spm), In.19104–6, In.19107–16 (12 spm), In.19117–22 (12 spm), In.19123 (7 spm), In.19131, In.20149 (10 spm), In.20150 (3 spm), In.20151, In.20152 (5 spm), In.20158, In.20160, In.20164, In.20173, In.20176, In.20183 (2 spm), In.20188, In.20189 (3 spm), In.20192, In.20193, In.20194 (4 spm), In.20195, In.20196, In.20200, In.20205, In.20708	89	Family Therevidae In.20148 (T)	1
		Superfamily Tipuloidea undetermined In.20171	1
		Undetermined In.19097, In.19099, In.19102–3 (2 spm), In.19107– 16 (2 spm), In.19117–22 (3 spm), In.19123 (larva), In.19136, In.20149 (3 spm), In.20150, In.20168, In.20172, In.20173 (2 spm), In.20183, In.20184 (2 spm), In.20188, In.20192 (2 spm), In.20194 (2 spm), In.20199 (2 spm), In.20208 (3 spm), in.20708 (2 spm)	34
Order Diptera (V. A. Blagoderov, M. B. Mostovsky)	203	Order Hymenoptera (APR)	102
Family Apsilocephalidae In.20167 (T)	1	Family Bethyidae In.19107–16 (5 spm, 2 T), In.19117–22 (3 spm, 1 T), In.19123 (9 spm), In.19136 (2 spm), In.20149 (7 spm, 1 T), In.20150 (5 spm)	31
Family Cecidomyiidae In.19096 (3 spm), In.19107–16 (T), In.19125, In.20151, In.20160, In.20167, In.20168 (2 spm), In.20173, In.20174, In.20194 (1+1? spm), In.20210	14+1?	Superfamily Chalcidoidea In.20208, In.19133–4, In.20194	3
Family Ceratopogonidae In.19133–4 (T), In.20168 (5 spm), In.20172, In.20173 (2 spm), In.20190, In.20208, In.20700	12	Family Diapriidae In.19124?	1?
Family Chaoboridae (E. D. Lukasevitch) In.20157 (T), In.20168 (2 spm, 2T)	3	Family Embolemidae In.20151, In.20194	2
Family Chironomidae In.19098 (2 spm), In.19117–22 (2 spm), In.20148?, In.20153 (7 spm), In.20168 (2 spm), In.20173?, In.20183 (1+2? spm), In.20189, In.20194 (1+1? spm), In.20207, In.20704?, In.20705 (2 spm), In.20707 (4 spm), In.20708 (2 spm)	25+6?	Family Evaniidae In.20192 (T)	1
Family Diadocidiidae In.20175 (4 spm), In.20188	5	Family Formicidae In.19125 (T), In.19132, In.20182 (3 spm, 1 T, 1F)	5
Family Dolichopodidae In.20197?	1?	Family Gasteruptionidae In.19091 (T), In.19098 (T), In.19117–22 (T), In.19129, In.20169, In.20174	6
Family Empididae In.19096 (8 spm), In.19099 (3 spm, 1 T), In.19102–3 (4 spm), In.19104–6 (F), In.19107–16 (3? spm), In.19117– 22 (5 spm, 1 T), In.19123 (7 spm), In.19136 (2 spm), In.20149?, In.20151, In.20173 (2 spm), In.20178, In.20192 (3 spm), In.20209	38+4?	Family Megaspilidae In.20159	1
Family Keroplatidae In.19104–6 (T), In.20179	2	Family Mymarommatidae In.20193, In.20208	2
Family Limoniidae In.20155	1	Family Pelecinidae In.20174	1
Family Mycetophilidae (P. Chandler) In.19100–1 (T)	1	Family Scelionidae In.19092, In.19094, In.19096, In.19102–3 (2 spm), In.19107–16, In.19117–22 (5 spm), In.19136 (3 spm), In.20158 (2 spm), In.20167, In.20183 (2 spm), In.20193, In.20197, In.20706 (2 spm)	23
Superfamily Mycetophiloidea undetermined In.19136, In.20171 (4 spm), In.20175 (2 spm)	7	Family Serphitidae In.20151, In.20190 (F)	2
Family Phoridae In.19102–3, In.19123, In.20193	3	Family Sphecidae In.19093 (T), In.19123 (2 spm, 2 T), In.19125 (T), In.19136 (9 spm, 9 T), In.20150 (T), In.20164?, In.20181 (T), In.20197 (T), In.20711 (T)	17+1?
Family Psychodidae	33+2?	Family Tiphiidae In.20150? (2 spm)	2?
		Undetermined In.19102–3, In.19104–6, In.20149, In.20208	4

		(8 spm), In.20158, In.20171 (3 spm), In.20179, In.20183, In.20186 (3 spm), In.20188, In.20189 (7 spm), In.20699		
Order Lepidoptera (APR, G. Robinson)	7		Order Araneae (K. Y. Eskov)	36
Family Micropterygidae	3+1?		Family Eusparassidae	1
In.19135 (T), In.20167, In.20168, In.20204.			In.20197 (juvenile)	
Undetermined	3		Family Myrmeciidae	3
In.19123, In.20151, In.20172			In.20193, In.20197, In.20208	
Order Neuroptera (A. G. Ponomarenko, M. Engel)	6		Family Oonopidae	2
Family Berothidae	3		In.20210, In.20168	
In.20193, In.20177, In.20197			Family Pisauridae (D. Penney)	1
Family Osmylidae	1		In.19132	
In.20150 (larva)			Family Tetragnathidae	1?
Superfamily Osmyloidea undetermined	1		In.20208?	
In.19107–16? (larva)			Family Theridiidae	1
Undetermined	1		In.20193	
In.19102–3			Family Thomisidae	1
Order Raphidioptera (A. G. Ponomarenko)	1		In.20174 (juvenile)	
Undetermined	1		Undetermined	26
In.20150 (larva)			In.19104–6, In.19117–22 (2 spm), In.19136 (3 spm), In.20151, In.20152 (4 spm), In.20154, In.20172 (2 spm), In.20174, In.20178, In.20183, In.20186 (3 spm), In.20189 (2 spm), In.20191 (2 spm), In.20194, In.20700	
Order Trichoptera	1		Order Chelonethi (APR, K. Y. Eskov)	38
Family Hydroptilidae	1		Family Cheiridiidae (M. L. I. Judson)	3
In.20180 (T)			In.19117–22 (2 spm, 1 T), In.19123 (F)	
Order Undetermined (APR)	13		Family Olpiidae (M. L. I. Judson)	1
In.19102–3 (3 spm), In.19104–6, In.19107–16 (2 spm), In.19117–22, In.20149 (2 spm), In.20150 (2 spm), In.20167 (2 spm)			In.20149 (T)	
			Undetermined	34
			In.19102–3 (6 spm), In.19107–16 (5 spm), In.19117–22, In.19123 (11 spm), In.20149 (2 spm), In.20150 (6 spm), In.20171, In.20189, In.20195	
Arachnida			Order Scorpionida (APR)	1
Order Acarina (A. L. Kartsev, O. L. Makarova)	164		Undetermined	1
Family Anystidae	1		In.20174 (F)	
In.20167			Diplopoda	
Family Bdellidae	2		Order Polyxenida (APR, S. I. Golovach)	60
In.19128, In.20193			Family Synxenidae	60
Superfamily Bdelloidea undetermined	1?		In.19102–3 (4 spm), In.19104–6 (6 spm), In.19117–22 (2 spm, 1 T), In.19123 (24 spm), In.20149 (5 spm), In.20150 (18 spm), In.20169	
In.20203?			Order Undetermined (S. I. Golovach)	1?
Family Cheyletidae	5		In.19123?	
In.19107–16 (T), In.19123 (3 spm), In.20149				
Family Erythraeidae	25			
In.19102–3, In.19107–16 (2 spm), In.19123 (3 spm), In.19132, In.20149, In.20150 (11 spm), In.20188, In.20193 (5 spm)				
Family Eupodidae	5+2?			
In.20150?, In.20193 (5+1? spm)				
Family Ixodidae	1			
In.19125 (juvenile)				
Undetermined	122			
In.19095, In.19100–1, In.19102–3 (14 spm), In.19104–6 (6 spm), In.19107–116 (25 spm), In.19117–22 (8 spm), In.19123 (25 spm), In.19128 (2 spm), In.19132, In.20149 (4 spm), In.20150 (8 spm), In.20151, In.20152				

REFERENCES

- Cockerell, T.D.A. 1917. Arthropods in Burmese amber. *American Journal of Science*, Ser. 4, **44**: 360–368.
- 1922. Fossils in Burmese amber. *Nature*, **109**: 713–714.
- Ross, A. J. & Jarzembowski, E.A. 1993. Arthropoda (Hexapoda; Insecta). In: Benton, M.J. (editor) *The fossil record 2*: 363–426. Chapman & Hall, London.